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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:			
Stefan A. Bledig *et al.*		Art Unit:	1631
Appln. No.:	09/198,779	Examiner:	Zhou Shubo
Filed:	November 24, 1998	Atty. Docket:	38-21(15077)B
For:	Nucleic Acid Molecules and Other Molecules Associated With Methionine Degradation Pathways		

APPELLANT'S BRIEF

Commissioner for Patents
Washington, DC 20231

Sir:

This is an Appeal from the Final Rejection of all claims pending in the above-described patent application. A Notice of Appeal was filed on November 26, 2002. Please charge the statutory fee of $320.00 for submitting this Brief to our Deposit Account Number 13-4125. *This Brief is submitted in triplicate.*

1. Real Party in Interest

The real party in interest is Monsanto Company, a Delaware corporation with offices at 800 North Lindbergh Boulevard, St. Louis, Missouri 63167.

2. Related Appeals and Interferences

The Applicants are unaware of any Appeals or Interferences related to this Appeal.

3. Status of Claims

Claims 1 and 13 are pending. Claims 2-12 were withdrawn from consideration by the Examiner and are not under appeal. Claim 1 stands finally rejected under 35 U.S.C. §

112. Claim 13 stands finally rejected under 35 U.S.C. §101 and 35 U.S.C. § 112. Appellant appeals all of the rejections of claims 1 and 13.

4. Status of Amendments

Applicants filed two amendments subsequent to Final Rejection in this case. The first amendment, filed on Nov. 26, 2002, was not entered by the examiner in a communication dated Dec. 23, 2002. The second amendment was filed on January 16, 2003. These amendments are directed to correcting the claim for priority in the specification and to making reference to the sequence listing.

5. Summary of Invention

The invention is directed to substantially purified nucleic acid molecules that encode a methionine degradation pathway enzyme. Specification at page 22, line 4-7 and line 21-23, page 23 line 10-14. More specifically, the invention is directed to substantially purified nucleic acid molecule comprising a nucleic acid sequence of SEQ ID NO: 1. *Id.*

6. Issues

The issues in this Appeal are:

(a) whether claim 13 is unpatentable under 35 U.S.C. § 101, for alleged lack of utility; and

(b) whether claim 13 is unpatentable under 35 U.S.C. § 112, for alleged lack of enablement ; and

(c) whether claim 1 is unpatentable under 35 U.S.C. § 112, for alleged lack of written description.

7. Grouping of Claims

Claims 1 and 13 do not stand and fall together. Claim 1 is rejected only for lack of written description under 35 U.S.C. § 112. Claim 13 is rejected under 35 U.S.C. § 112

for lack of enablement and under 35 U.S.C. § 101. Patentability of claim 1 and 13 is addressed together in Sections 8.A through 8.D below. Separate patentability of claims 1 and 13 is addressed in Section 8.E below. A copy of the claims on appeal is attached hereto as Appendix A.

8. Argument

A. Summary of Appellant's Position

As the Supreme Court said in *Brenner v. Manson*, the "basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility....where specific benefit exists in currently available form." 383 U.S. 519, 534-35, 148 U.S.P.Q. 689, 695 (1966). Applicants have met their part of the bargain – they have disclosed nucleic acid molecules which, in their current form, provide at least one specific benefit to the public, for example as a methionine adenosyltransferase, or use of these nucleic acid molecule for generation of detection tools such as hybridization probes, or antibodies which can be used as diagnostic agent. Anyone of these benefits is specific, not vague or unknown, and is a "real world" or substantial benefit and is an obvious benefit to any one skilled in the art. Because the claimed nucleic acid provides at least one of these benefits, it satisfies the utility requirement of 35 U.S.C. § 101. Because the specification teaches how to make and use the claimed nucleic acids for the disclosed utilities, the enablement requirement of 35 U.S.C. § 112 has been met.

Furthermore, Applicants have provided an adequate description of the claimed nucleic acids that demonstrates Applicants' possession of the claimed invention. The genus of claimed nucleic acid molecules, *i.e.*, nucleic acid molecules "comprising" SEQ ID No. 1 have been described by the recitation of a "basic and novel" common structural feature – the nucleotide sequence of SEQ ID No. 1 – which distinguishes them from nucleic acid molecules not in the claimed genus. Because the specification demonstrates

that Applicants had possession of (and have provided an adequate description of) the claimed genus of nucleic acid molecules, the specification satisfies the written description requirement of 35 U.S.C. § 112.

B. The Claimed Nucleic Acids Have Legal Utility

Pending claim 13 was erroneously rejected under 35 U.S.C. § 101 because the claimed inventions were allegedly not supported by either a "specific asserted utility, or a well-established utility." Final Action mailed August 27, 2002 (Paper No. 19) ("Final Action") page 2.

This analysis misstates the nature of the asserted uses, ignores disclosed utilities, and misapplies the doctrine of "practical utility" developed by the courts after *Brenner v. Manson*. The "threshold for utility is not high: An invention is 'useful' under section 101 if it is capable of providing some identifiable benefit." *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366, 51 U.S.P.Q.2d 1700, 1702 (Fed. Cir. 1999), *citing Brenner v. Manson*, 383 U.S. 519, 534 (1966). Furthermore, an invention need only provide one identifiable benefit to satisfy 35 U.S.C. § 101. *See Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 958, 220 U.S.P.Q. 592, 598 (Fed. Cir. 1983) ("when a properly claimed invention meets at least one stated objective, utility under section 101 is clearly shown").

The courts have expressed a test for utility that hinges on whether an invention provides an "identifiable benefit." *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366, 51 U.S.P.Q.2d 1700, 1702 (Fed. Cir. 1999), *citing Brenner v. Manson*, 383 U.S. 519, 534 (1966). For analytical purposes, the requirement for an "identifiable benefit" may be broken into two prongs: (1) the invention must have a specific, *i.e.*, not vague or unknown benefit, *In re Brana*, 51 F.3d 1560, 1565, 34 U.S.P.Q.2d 1436, 1440 (Fed. Cir. 1995); and (2) the invention must provide a real world, *i.e.*, practical or "substantial" benefit. *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1563, 39 U.S.P.Q.2d 1895, 1899 (Fed. Cir. 1996). A corollary to this test for utility is that the invention must not be "totally

incapable of achieving a useful result," *i.e.*, the utility must not be incredible or unbelievable. *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1571, 24 U.S.P.Q.2d 1401, 1412 (Fed. Cir. 1992).

Even if the Examiner does not accept applicants' position that the based upon sequence identity, the disclosed gene encodes a polypeptide having specific enzymatic activity, i.e., as a methionine adenosyltransferase, Applicants have asserted in the specification that the claimed nucleic acid molecules provide other identifiable benefits, for example, use as a hybridization probe to identify the presence and/or identity of polymorphisms. See, e.g., specification at page 39, line 15 to page 40 line18. Use of polymorphism is a very well known critical component of modern plant breeding (e.g. US 6,096 944), and therefore the molecules of the present invention have utility for breeding plants with altered phenotypes.

One utility alone is enough to satisfy Section 101. Because Applicants need only establish a single utility to satisfy 35 U.S.C. § 101, and they have done so in the present case, the premise of the rejection under Section 101 is incorrect, and the rejection should be reversed. Such a proven use that provides an acknowledged known benefit to the public satisfies the utility requirement of 35 U.S.C. § 101 & 112

(1) The Claimed Nucleic Acid Molecule Provide A Specific Benefit, *i.e.*, It has Specific Utility

Applicants have asserted that the claimed nucleic acid molecules are themselves useful for utilities disclosed in the specification, *e.g.*, as a methionine adenosyltransferase. Applicants have also asserted that the claimed nucleic acid molecules are useful to detect the presence and/or identity of polymorphisms, as molecular markers for plant breeding, as hybridization probes for expression profiling, as probes for isolating genomic clone for isolation of tissue enhanced, tissue specific, cell specific, cell type, developmentally or environmentally regulated promoters, as molecules to produce transgenic plant expressing polypeptides encoded by said molecules, and as

molecules to suppress the expression of said molecules present in naturally occurring plants. The specification also discloses additional utilities for the claimed nucleic acid molecules, including introduction of the claimed nucleic acid molecules into a plant or plant cell (as antisense inhibitors), which can then be used to screen for compounds such as herbicides. Specification at page 120, line 19 through page 121, line 23. For example, a compound can be provided to both an antisense plant and a control plant (no antisense) and the effect of the compound on the plant can be monitored. Such a screen is analogous to a cell-based assay, which is acknowledged as having a legally sufficient utility.[1] Thus, the use in such a screen of a plant or plant cell having an introduced claimed nucleic acid molecule is a legally sufficient utility. Other utilities disclosed in the specification include use of the claimed nucleic acid molecules to measure the level of mRNA in a sample,[2] and use as molecular markers.[3]

(a) Use as a methionine adenosyltransferase

The final action rejects the use of the claimed invention as a methionine adenosyltransferase because despite a 92% sequence identity to a known methionine adenosyltransferase,[4] there is allegedly sufficient unpredictability in the art to not accept

[1] *See, e.g.*, MPEP § 2107 at page 2100-25.

[2] It is standard practice to screen populations of nucleic acids with DNA sequences, often attached to a microarray, without characterizing each and every target DNA. Knowing that the gene corresponding to the claimed nucleic acid molecules is expressed under certain conditions or in certain tissues or at certain levels is in itself useful. For example, such information is useful to detect expression changes in traits of interest, *e.g.*, drought stress. This use is not using the claimed nucleic acid molecules to identify a "'real world' context of use." It is a **use** of the claimed nucleic acid molecules in a real world context.

[3] One can use the claimed nucleic acid molecules to determine location of a corresponding DNA sequence on a physical map or genetic map location without knowing anything beyond the claimed sequence. The use of molecular markers is a practical activity in the development of nutritionally enhanced or agriculturally enhanced crops. Such markers are useful in, for example, genetic mapping or linkage analysis, marker-assisted breeding, physical genome mapping, transgenic crop production, crop monitoring diagnostics, and gene identification and isolation. As more markers are identified, genetic maps will become more detailed and it will be easier for plant breeders to breed for particular traits.

[4] See Table A, page 224. There is no basis for the statement in the final action that the comparison sequence ("putative enzyme") used to establish homology does not have the stated utility (Final Action, page 3).

this claimed utility. However, the final action has failed to show an example where such a level of homology has not been a reasonable predictor of function. The final action contains only a bare allegation that individual amino acid changes can result in loss of function. However, since the claimed utility is not incredible and based on sound scientific reasoning, such an allegation cannot support upholding the final rejection.

(b) Identifying the Presence and/or Identity of a Polymorphism

One of the other utilities disclosed in the specification is use of the claimed nucleic acid molecules to identify the presence and/or identity of a polymorphism. Specification at page 39, line 15 to page 40 line 18. Use of the claimed nucleic acid molecule to detect the presence or absence of polymorphisms is as legally sufficient utility as is a gas chromatograph to analyze the chemical composition of a gas – such use determines information about the gas, not the gas chromatograph. Even if the gas chromatograph detects the absence of a particular chemical element in the gas, that finding does not obviate the utility of the gas chromatograph itself. Information has been obtained about the gas.[5] Likewise, the claimed nucleic acid molecules have utility even if the absence of a particular polymorphism is detected. Indeed, the absence of a polymorphism usefully demonstrates that the two (or more) populations being compared share a common genetic heritage.

The claimed nucleic acid molecules have been asserted to work for a specific, *i.e.*, not vague or unknown benefit – to identify the presence or absence of a polymorphism. This benefit is immediately realized directly from the use of the claimed nucleic acids,

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[5] For example, gas sampled from crude oil may be analyzed by gas chromatography for the presence or absence of chlorine, which is toxic to catalysts used in gasoline refining even in very low concentrations. The absence of a peak at the molecular weight of chlorine indicates the absence of chlorine in the sample being tested, thereby providing useful information (no chlorine is present, therefore the catalyst will not be destroyed) to the refinery manager. *See, e.g.*, U.S. Patent No. 6,133,740 entitled "Chlorine Specific Gas Chromatographic Detector."

not from the use of other molecules. Such a proven use that provides an acknowledged known benefit to the public satisfies the utility requirement of 35 U.S.C. § 101.

(c) Probes for Other Molecules or Source for Primers

Other uses for the claimed nucleic acid molecules are as probes for other molecules or as a source of primers. The specification discloses that the claimed nucleic acid molecules can be used, via hybridization, in real world applications such as to isolate nucleic acid molecules of other plants and organisms such as alfalfa, *Arabidopsis*, barley, *Brassica*, etc.[6] Specification at page 73, lines 5 through page 75, line 7. The Examiner has not provided any evidence that would reasonably suggest that this cannot be done, and so has not met the burden of proof required to establish a utility rejection. *See In re Brana*, 51 F.3d 1560, 1567, 34 U.S.P.Q.2d 1436, 1441 (Fed. Cir. 1995). *Accord In re Gaubert*, 524 F.2d 1222, 1225-26, 187 U.S.P.Q. 664, 666 (C.C.P.A. 1975); *In re Langer*, 503 F.2d 1380, 1391, 183 U.S.P.Q. 288, 297 (C.C.P.A. 1974).

One illustrative example of a molecule that can be isolated using the claimed nucleic acid molecules is the promoter of the gene corresponding to the claimed nucleic acid molecules (Please see US Patent Nos. 5,898,096 and 5,589,583). Applicants have specifically disclosed that one use of the claimed nucleic acid molecules is to initiate a chromosome walk. Specification at page 75, line 3 through 15.

In short, the Final Action fails to consider alternative, legally sufficient utilities for the claimed invention. Moreover, there is no requirement that the utilities need to be "specific" to the claimed nucleic acids. The claimed nucleic acid molecules provide a particularly appropriate and demonstrably useful starting point for a walk to isolate a promoter that is active in plants. Isolation of such a promoter would be desirable and

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[6] Furthermore, one skilled in the art of hybridization and amplification understands how to design and utilize probes and primers to target a sequence of interest, and therefore it is not necessary for Applicants to provide a laundry list of each and every nucleic acid molecule that can be identified using the claimed nucleic acid molecules.

particularly useful because it allows expression of proteins at that important developmental state, including expression of proteins in a tissue enhanced, tissue specific, cell specific, cell type or environmentally regulated manner. A random nucleic acid molecule does not provide an equally good starting point to isolate such a promoter. Furthermore, even if a random nucleic acid molecule provided a better starting point than the claimed nucleic acid molecules, it would not obviate the utility of the claimed nucleic acid molecules. An invention may be "less effective than existing devices but nevertheless meet the statutory criteria for patentability." *Custom Accessories, Inc. v. Jeffrey-Allan Indus.*, 807 F.2d 955, 960 n.12, 1 U.S.P.Q.2d 1196, 1199 n.12 (Fed. Cir. 1986). see also US Patent Nos. 5,898,096 and 5,589,583.

The Examiner has failed to provide evidence, or even to suggest a reason for believing that the claimed nucleic acid molecules could not be so used. Accordingly, the assertion of this utility as a probe for other molecules or as a source of primers satisfies the requirements of 35 U.S.C. § 101. *See In re Brana*, 51 F.3d 1560, 1566, 34 U.S.P.Q.2d 1436, 1441 (Fed. Cir. 1995).

(2) The Claimed Nucleic Acid Molecules Provide Practical, Real World Benefits, *i.e.*, They Have Substantial Utility

The touchstone of "substantial" utility is "real world" or "practical utility." *See, e.g., Fujikawa v. Wattanasin*, 93 F.3d 1559, 1563, 39 U.S.P.Q.2d 1895, 1899 (Fed. Cir. 1996). "'Practical utility' is a shorthand way of attributing 'real world' value to claimed subject matter. In other words, one skilled in the art can use a claimed discovery in a manner which provides some immediate benefit to the public." *Nelson v. Bowler*, 626 F.2d 853, 856, 857, 206 U.S.P.Q. 881, 883 (C.C.P.A. 1980) ("tests evidencing pharmacological activity may manifest a practical utility even though they may not establish a specific therapeutic use").[7]

[7] *Accord Cross v. Iizuka*, 753 F.2d 1040, 1050, 224 U.S.P.Q. 739, 747-48 (Fed. Cir. 1985); *Rey-Bellet v. Engelhardt*, 493 F.2d 1380, 1383, 181 U.S.P.Q. 453, 454 (C.C.P.A. 1974).

There can be no question that one skilled in the art can use the claimed nucleic acid molecules in a manner which provides an immediate benefit to the public, for example to detect the presence or absence of polymorphisms. The detection of polymorphisms provides an immediate benefit to the public because, for example, it enables a plant breeder to determine the distribution of parental genetic material in the progeny of a cross. This information about a plant's genetic profile, like the information about a compound's pharmacological profile in *Nelson*, provides an immediate benefit and thus a practical utility to the public.

Quite apart from the detection of polymorphisms, there is also no question that the public has recognized the benefits provided by the claimed subject matter, and has attributed "real world" value to such nucleic acid molecules. The utility of DNA is not merely an academic issue; the real world value of DNA is self-evident from the growth of a multi-million dollar industry in the United States premised on the usefulness of DNA. Like fermentation processes involving bacteria, DNA and nucleic acid molecules with DNA sequences are "industrial product[s] used in an industrial process – a useful or technical art if there ever was one." *See, e.g., In re Bergy*, 563 F.2d 1031, 1038, 195 U.S.P.Q. 344, 350 (C.C.P.A. 1977).

The market participants for DNA products are primarily sophisticated corporations and highly knowledgeable scientists who are unlikely to pay for useless inventions. *Compare Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 960, 220 U.S.P.Q. 592, 599 (Fed. Cir. 1983) ("People rarely, if ever, appropriate useless inventions"). Quite simply, the commercial value of DNA is proof of their real world value and of the benefits they provide to the public. This evidence cannot be ignored. The patent system was created to serve and foster growth and development in the industrial arts. If the industries themselves recognize and appreciate the value of an invention, it is not for the Patent Office to say that they are mistaken.

C. The Claimed Nucleic Acids Are Enabled by the Specification

The enablement of the claimed nucleic acid molecules has been challenged. Claim 13 was rejected as not enabled by the specification, because the claimed nucleic acid molecules allegedly lack utility and therefore one skilled in the art would not know how to use the claimed invention. Final Action at pages 3. This rejection was erroneous and has been overcome by the arguments stated above regarding utility because it is well-established law that "the enablement requirement is met if the description enables any mode of making and using the invention." *Johns Hopkins University v. CellPro*, 152 F.3d 1342, 1361, 47 U.S.P.Q.2d 1705, 1719 (Fed. Cir. 1998) (emphasis added), *quoting Engel Indus. v. Lockformer Co.*, 946 F.2d 1528, 1533, 20 U.S.P.Q.2d 1300, 1304 (Fed. Cir. 1991). Unless and until the Examiner comes forth with evidence to rebut the objective truth of the utilities disclosed in the specification, this enablement rejection must be withdrawn as improper. *See In re Wright*, 999 F.2d 1557, 1561-62, 27 U.S.P.Q.2d 1510, 1513 (Fed. Cir. 1993); *Ex parte Lemak*, 210 U.S.P.Q. 306, 307 (Bd. App. 1981) ("pure conjecture" does not substantiate rejection for lack of enablement).

D. The Specification Provides An Adequate Written Description of the Claimed Invention

The examiner has rejected claim 1 under 35 USC §112, 1st paragraph as lacking written description. Despite the Examiner's admission that SEQ ID NO: 1 is adequately described by the specification, the adequacy of the written description of the claimed invention has been challenged by the Examiner because the nucleic acid molecule of claims 1 is allegedly "not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s)...had possession of the claimed invention." Final Action at page 4. The basis for the Examiner's challenge are that (1) one of skill in the art would allegedly conclude that Applicants were not in possession of the claimed nucleic acid molecules since SEQ ID No:1 does not encode full length open reading frame and (2) there is allegedly a lack of description to reasonably

convey to one skilled in art that the inventor had possession of the claimed invention. These are not proper bases for a written description rejection of a "comprising" claim wherein "nucleic acid that encodes a maize enzyme or fragment of said maize enzyme" is claimed. If they were, every "comprising" claim ever written would be invalid for failing to describe every nuance of the claimed invention. Furthermore, the specification demonstrates to one skilled in the art that Applicants were in possession of the claimed genera of nucleic acid molecules.

(1) The Specification Reflects Applicant's Possession of the Claimed Invention

The purpose of the written description requirement is to ensure that the inventors had possession of the claimed subject matter, *i.e.*, to ensure that the inventors actually invented what is claimed. *Gentry Gallery Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 U.S.P.Q.2d 1498, 1503 (Fed. Cir. 1998); *Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997); *In re Alton*, 76 F.3d 1168, 1172, 37 U.S.P.Q.2d 1578, 1581 (Fed. Cir. 1996). If a person of ordinary skill in the art would, after reading the specification, understand that the inventors had possession of the claimed invention, even if not every nuance, then the written description has been met. *In re Alton*, 76 F.3d at 1175, 37 U.S.P.Q.2d at 1584. A person of ordinary skill in the art, *e.g.*, a molecular biologist, would, after reading the present specification, understand that Applicants had possession of SEQ ID NO: 1, and therefore, the claimed invention.

Applicants have provided the nucleotide sequences required by the claim, *e.g.*, SEQ ID NO: 1, and has thus established possession of the claimed invention. The fact that the claims at issue are intended to cover molecules that include the recited sequence joined with additional sequences, or that hybridize under specific conditions to the recited sequence does not mean that Applicants were any less in possession of the claimed nucleic acid molecules.[8] It is well established that use of the transitional term

[8] If the Examiner is arguing that no possession is shown because the precise claim language is not used in the specification, then it goes beyond what is required by the law. It is well-settled that the description of a

"comprising" leaves the claims "open for the inclusion of unspecified ingredients even in major amounts." *Ex parte Davis*, 80 U.S.P.Q. 448, 450 (B.P.A.I. 1948). *Accord PPG Indus. v. Guardian Indus.*, 156 F.3d 1351, 1354, 48 U.S.P.Q.2d 1351, 1353-54 (Fed. Cir. 1998); *Moleculon Research Corp. v. CBS*, 793 F.2d 1261, 1271, 229 U.S.P.Q. 805, 812 (Fed. Cir. 1986).

The present application describes more than just the nucleotide sequence required by the claims (SEQ ID NO:1), for example, it describes vectors comprising the claimed nucleic acid molecule. Furthermore, the addition of extra nucleotides or detectable labels to the disclosed nucleotide sequence (SEQ ID NO:1) is readily envisioned by one of ordinary skill in the art upon reading the present specification,[9] in particular at page 52, lines 19-23 (describing sequences with labels to facilitate detection).

E. The claims do not stand and fall together

The claims do not stand and fall together. Claim 1, which is only rejected under 35 USC §112, 1st paragraph for lacking written description, has sufficient utility and is enabled, as admitted by the examiner. Claim 13, which is rejected under 35 U.S.C §101 and 35 U.S.C § 112 for lacking utility and enablement, has sufficient written description, as admitted by the examiner. Therefore, a determination by the Board of patentability of either claim 1 or 13 does not resolve the determination of patentability of the other claim.

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claimed invention need not be *in ipsis verbis*. *Gentry Gallery v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 U.S.P.Q.2d 1498, 1503 (Fed. Cir. 1998); *In re Alton*, 76 F.3d 1168, 1175, 37 U.S.P.Q.2d 1578, 1583 (Fed. Cir. 1996); *Martin v. Johnson*, 454 F.2d 746, 751, 172 U.S.P.Q. 391, 395 (C.C.P.A. 1972).

[9] It is established patent jurisprudence that Applicants need not teach "conventional and well-known genetic engineering techniques." *E.g., Ajinomoto Co. v. Archer-Daniels-Midland Co.*, 228 F.3d 1338, 1345, 56 U.S.P.Q.2d 1332, 1337 (Fed. Cir. 2000).

CONCLUSION

In view of the foregoing, it is respectfully requested that the Board of Patent Appeals and Interferences reverse the Rejections and that the subject application be allowed forthwith.

Respectfully submitted,

Date: Jan , 27, 2003

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APPENDIX A

Claim 1

A substantially purified nucleic acid molecule that encodes a maize enzyme or fragment of said maize enzyme, wherein said maize enzyme is Methionine Adenosyltransferase and wherein said nucleic acid molecule comprises the nucleic acid sequence of SEQ ID NO: 1

Claim 13

The nucleic acid molecule of claim 1, consisting essentially of the sequence of SEQ ID NO:1.